

WHAT IS CLAIMED IS:

1. A ferroelectric memory, comprising:

an insulation film;

a hollow formed in a top surface of said insulation film;

a lower electrode formed in said hollow;

a ferroelectric formed on said lower electrode; and

an upper electrode formed on said ferroelectric.

2. A ferroelectric memory according to claim 1, further comprising a film formed

in a bottom of said hollow and separating between said insulation film and said lower electrode.

3. A ferroelectric memory according to claim 1 ~~or 2~~, wherein said lower electrode

includes a first electrode portion formed at a corner of said hollow and a second electrode portion formed on said first electrode portion.

4. A ferroelectric memory according to ~~any of claims 1 to 3~~, wherein said lower

electrode is formed on a surface thereof with thin film of a same material as that of said lower electrode.

5. A ferroelectric memory according to ~~any of claims 1 to 4~~, wherein said lower

electrode and said insulation film at respective top surfaces are planarized flush with each other.

6. A method for manufacturing a ferroelectric memory, comprising:

(a) forming an insulation film on a semiconductor substrate;

(b) forming a hollow in a surface of said insulation film;

(c) applying a lower electrode in said hole;

(d) forming a ferroelectric film on said insulation film; and

7. A manufacturing method according to claim 6, wherein said step (c) is to form said lower electrode by sol-gel method.

8. A manufacturing method according to claim 6 ~~or 7~~, wherein said step (c) includes the following steps of (c1) forming conductive film on a top surface of said insulation film including an inside of said hollow by a spin coating method, and (c2) removing by etching said conductive film at a portion other than said hollow.

9. A manufacturing method according to claim 6 ~~or 7~~, wherein said step (c) includes steps of (c3) forming a first electrode portion at a corner of said hollow by a process including a spin coating method, and (c4) forming a second electrode portion in said first electrode portion.

10. A manufacturing method according to claim 9, wherein said step (c4) is to form said second electrode portion by a process including a spin coating method.

11. A manufacturing method according to claim 9, wherein said step (c4) is to form said second electrode portion by sputtering.

12. A manufacturing method according to ~~any of claims 6 to 11~~, wherein said step (b) includes steps of (b1) forming a film in said insulation film at a predetermined depth position from a top surface thereof, and (b2) forming said hollow by etching said insulation film utilizing film as an etch stop.

13. A manufacturing method according to ~~any of claims 6 to 12~~, further comprising step of (f) planarizing a top surface of said lower electrode, wherein a ferroelectric is formed thereon.

14. A manufacturing method according to ~~any of claims 6 to 12~~, further comprising steps of (f) planarizing a top surface of said lower electrode, and (g) forming a thin film thereon of a same material as said lower electrode, wherein said ferroelectric is